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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/663,638

09/16/2003

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EXAMINER

LEWIS, BEN

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/663,638	Applicant(s) BAKOS ET AL.	
	Examiner Ben Lewis	Art Unit 1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 15-18 and 23-35 is/are pending in the application.
- 4a) Of the above claim(s) 15-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 23-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 December 2005 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 1<sup>st</sup> 2007 has been entered. Claims 23-35 were added. Claims 1-14 and 19-22 were cancelled. Claims 15-18 were withdrawn

### **Claim Rejections - 35 USC § 103**

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 23, 26 and 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ratte et al. (U.S. Patent No. 6,902,095 B2) and further in view of Williamson et al. (U.S. Patent No. 5,533,764).

With respect to claims 23, 26 and 32-35, Ratte et al discloses a method of cold forming a two-part battery terminal and a two-part cold formed battery terminal comprising a cold formed lead or lead alloy slug having a male fastener protruding from one side of the cold formed slug with a head portion "first portion" of the fastener rotationally retained and embedded in the battery terminal by cold formed lead or lead alloy around the end face of the fastener (Col 1 lines 45-51) (See Fig. 5).

With respect to a threaded portion, Ratte et al. teach that FIG. 5 is a cross-sectional view of the partially formed battery terminal of FIG. 4 with the head of a threaded male fastener and a portion of the shank of the threaded male fastener embedded in the battery terminal (Col 1 lines 60-67).

Ratte et al do not specifically teach a bolt with a tapered sealing portion. However, Williamson teach a transversely hydraulic coupling with lipped port wherein Collar **430** has external tapered surfaces **431** and **432** which sealingly engage body **405** and port **401'**, respectively. External tapered surface **431** extends into body **405** to engage internal tapered surface 406. Also, external tapered surface **432** extends into port **401'** to engage internal tapered surface **413** (Col 9 lines 64-67).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the tapered portion "frusto-conical shape" of Williamson et al into the bolt of Ratte et al because Williamson et al teach that external tapered surfaces provide a seal (Col 9 lines 64-67).

With respect to claims 23, 32 and 35, claims 23, 32 and 35 are product by process claims. The insert molding of the bolt as molten lead, does not further limit the product of claim 15. MPEP 2113 states, "Even though product-by-process claims are limited by and defined by the process, determination of patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F. 2d 698,227 USPQ 964,966 (Fed Cir. 1985). Since Applicant's product claim contains a process of insert molding of the bolt as molten lead, then the process of "insert molding of the bolt as molten lead" is not given patentable weight in this claim.

With respect to claim 35, Ratte et al discloses a method of cold forming a two-part battery terminal and a two-part cold formed battery terminal comprising a cold formed lead or lead alloy slug (subassembly) having a male fastener protruding from one side of the cold formed slug with a head portion of the fastener rotationally retained and embedded in the battery terminal by cold formed lead or lead alloy around the end face of the fastener (Col 1 lines 45-51) (See Fig. 5).

With respect to claim 31, Ratte et al. as modified by Williamson et al has been discussed in paragraph 2 above. Landgrebe teaches a bolt **15** with a non-threaded portion **19** above the threaded portion **21**, as well as a sealing, tapered portion **17** which bottoms against a planar surface **35** of a recessed portion **33** of an internally threaded body (B) (Col 3 lines 50-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the tapered **432** abutment of Ratte et al. as modified by Williamson et al such that the tapered portion **432** abuts a planar surface of a recessed portion of the nut **303**, in view of the teaching of Landgrebe, the motivation being to prevent over-torquing of the bolt **409** (See Figs 12 and 16).

3. Claims 24, 25, 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ratte et al. (U.S. Patent No. 6,902,095 B2) and Williamson et al. (U.S. Patent No. 5,533,764) as applied to claim 23 above and further in view of Whitney (U.S. Patent No. 2,353,531).

With respect to claims 24, 29 and 30, Whitney teaches an integral washer 11 as seen in figure 1 which includes projection 12, and also wherein the washer is regarded as having semi-circular projections below the head flats as seen in figure 1. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a washer with the bolt head of Ratte et al. as modified by Williamson et al, in view of the teaching of Whitney, the motivation being to strengthen the bolt head of Ratte et al. as modified by Williamson et al.

With respect to claim 25, Ratte et al. teach that FIG. 4 shows that male fastener 22, which has a shank having a non-threaded portion 23 and a threaded portion 23a has been axially inserted into chamber 16a with the threaded shank 23a of the male fastener 22 extending outward for securement of a female fastener thereto (Col 3 lines 5-15).

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ratte et al. (U.S. Patent No. 6,902,095 B2) and further in view of Williamson et al. (U.S. Patent No. 5,533,764).

With respect to claim 27, Ratte et al. teach that FIG. 5 is a cross-sectional view of the partially formed battery terminal of FIG. 4 with the head of a threaded male fastener and a portion of the shank of the threaded male fastener embedded in the battery terminal (Col 1 lines 60-67).

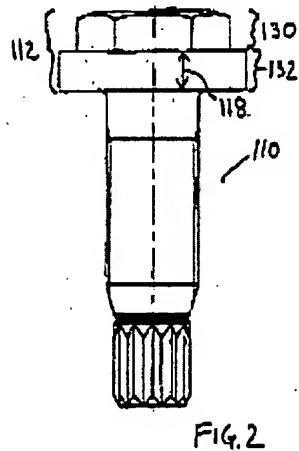
Ratte et al do not specifically teach a bolt with a tapered sealing portion and the shank portion has a larger diameter than a second end of said sealing portion that is connected to said thread portion. However, Williamson teach a transversely hydraulic coupling with lipped port wherein Collar **430** has external tapered surfaces **431** and **432** which sealingly engage body **405** and port **401'**, respectively "larger shank diameter and smaller sealing portion diameter". External tapered surface **431** extends into body **405** to engage internal tapered surface **406**. Also, external tapered surface **432** extends into port **401'** to engage internal tapered surface **413** (Col 9 lines 64-67).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the tapered portion "frusto-conical shape" of Williamson et al into the bolt of Ratte et al because Williamson et al teach that external tapered surfaces provide a seal (Col 9 lines 64-67).

4. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ratte et al. (U.S. Patent No. 6,902,095 B2) in view of Williamson et al. (U.S. Patent No. 5,533,764) and Whitney (U.S. Patent No. 2,353,531) as applied to claim 24 above and further in view of Lohr (U.S. Pub. No. 2003/0215302 A1).



With respect to claim 28, Ratte et al. as modified by Williamson et al and Whitney has been discussed in paragraph 3 above. Ratte et al. as modified by Williamson et al. and Whitney do not specifically teach wherein the ratio of a height of said head portion to the thickness of said washer portion is 1.24. However, Lohr disclose an oversized wrenching head tension control bolt (title) wherein, Referring to FIG. 2, an alternate embodiment of heavy head bolt 110 is depicted. In such instances flange 132 can be constructed to a predetermined size when a minimum washer thickness is required. Heavy head bolt 110 is similar to oversized head bolt 10, except for the dimensions of heavy head 112. Flange section 132 is constructed to a predetermined height 118 of at least the minimum structural steel framing industry standard height of washer 80. Wrenching section 130 is constructed to a height of at least the minimum structural steel framing industry standard height for hexagon head 312. Such heavy head bolt 110 accordingly meets the cumulative industry thickness standards for a bolt head and a washer (Paragraph 0080) (See Fig 2). Therefore, it would have been within the skill of the ordinary artisan to adjust the bolt and flange "washer" height of Ratte et al. as modified by Williamson et al and Whitney to within a ratio as claim by Applicant in order to meet minimum structural strength requirements. *Discovery of optimum value of result effective variable in known process is ordinarily within skill of art. In re Boesch*, CCPA 1980, 617 F.2d 272, 205 USPQ215.



### ***Response to Arguments***

5. Applicant's arguments filed on May 1<sup>st</sup> 2007 have been fully considered but they are not persuasive.

*Applicant's principal arguments are*

(a) Claim 23 was added to specify that the lead portion is a lead casting that surrounds the bolt head, washer, and sealing portion of the battery terminal, and that it is not possible for molten lead to leak from the mold cavity past the sealing portion of the bolt and onto the threaded portion thereof.

(b) As amended, the present invention is directed to a battery terminal for use in a battery cell. The method disclosed in Ratte et al. is specifically directed to a cold forming process of making a battery terminal, whereas the present invention is for a battery

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terminal made from a bolt and a molten lead casting molded thereon. Ratte et al.'s principle of operation is inherently different from the present invention. One skilled in the art would not look to Ratte et al. to solve the problem of lead-alloy leaking from an insert molding mold cavity onto the battery terminal's threads because a cold forming process does not fundamentally deal with such leakage problems. Cold forming is a high-speed manufacturing process that produces parts by using machines to apply very large brute forces to metal, forces that are greater than the metal's elastic limit, in order to form various shapes therein as opposed to metal forming cutting or heating. Therefore, during the cold forming process there is never any issue with regard to the type of leakage solved by the present invention. Accordingly, Ratte et al., as well as the other prior art cited, fail to teach a battery terminal bolt used specifically during an insert molding process because they do not deal with the same problem as is addressed in the present invention. The new claims are therefore not obvious.

In response to Applicant's arguments, please consider the following comments.

(a) and (b) Ratte et al do not specifically teach a bolt with a tapered sealing portion. However, Williamson teach a transversely hydraulic coupling with lipped port wherein Collar **430** has external tapered surfaces **431** and **432** which sealingly engage body **405** and port **401'**, respectively. External tapered surface **431** extends into body

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**405** to engage internal tapered surface **406**. Also, external tapered surface **432** extends into port **401'** to engage internal tapered surface **413** (Col 9 lines 64-67).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the tapered portion of Williamson et al into the bolt of Ratte et al because Williamson et al teach that external tapered surfaces provide a seal (Col 9 lines 64-67).

The seal of Williamson et al. performs the same function of preventing lead-alloy leaking from an insert molding mold cavity onto the battery terminal's threads when incorporated into Ratte et al. Since Applicant's claim is drawn to a battery terminal, the insert molding of the bolt as molten lead, does not further limit the product of claim 15. MPEP 2113 states, "Even though product-by-process claims are limited by and defined by the process, determination of patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F. 2d 698,227 USPQ 964,966 (Fed Cir. 1985). Since Applicant's product claim contains a process of insert molding of the bolt as molten lead, then the process of "insert molding of the bolt as molten lead" is not given patentable weight.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ben Lewis whose telephone number is 571-272-6481. The examiner can normally be reached on 8:30am - 5:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ben Lewis

Patent Examiner  
Art Unit 1745

  
**PATRICK JOSEPH RYAN**  
**SUPERVISORY PATENT EXAMINER**